No. 200100115

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Phytogen Seed Company, LLC

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COTTON

'PHY 72 Acala'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-sixth day of July, in the year two thousand and five.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-005

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act o 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protectior certificate is to be issued (7 U.S.C. 2421). Information is held confidentia until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Phytogen Seed Company, LLC

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
B25507
PHY 72
Phytogen 72

3. VARIETY NAME
PHY 72 Acala

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
P. O. Box 787
850 Plymouth Avenue
Corcoran, CA 93212

5. TELEPHONE *(include area code)*
(559) 992-3988

6. FAX *(include area code)*
(559) 992-2581

FOR OFFICIAL USE ONLY

PVPO NUMBER 200113

FILING DATE February 22, 2001

FEES RECEIVED
FILING AND EXAMINATION FEE: $ 2450
DATE February 22, 2001
CERTIFICATION FEE: $
DATE

7. GENUS AND SPECIES NAME
Gossypium hirsutum L.

8. FAMILY NAME *(Botanical)*
Malvacieae

9. CROP KIND NAME *(Common name)*
Acala Cotton

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Delaware

12. DATE OF INCORPORATION
Dec. 24, 1997

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Joel Mahill
Phytogen Seed Company, LLC
P. O. Box 787
Corcoran, CA 93212

14. TELEPHONE *(include area code)*
(559) 992-3988

15. FAX *(include area code)*
(559) 992-2581

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
g. ☒ Filing and Examination Fee ($2,460), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)?*
☒ YES *(If "yes," answer items 18 and 19 below)* ☐ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES *(If "yes," give names of countries and dates)* ☐ NO
U. S. March 2000

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
Joel F. Mahill		David M. Anderson	
NAME *(Please print or type)*		NAME *(Please print or type)*	
Joel F. Mahill		David M. Anderson	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Cotton Breeder	2/2/01	Global Leader Cotton Breeding	2/2/01

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received i PVPO: (1) Completed application form signed by the owner; (2) completed Exhibits A, B, C, E; (3) at least 2,500 viable untre seeds, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture be deposited and maintained in a public repository prior to issuance of a certificate; (4) check drawn on a U.S. bank for $2, ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.175 of the Regula and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 30 days, then returned to the applicar unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10 Baltimore Blvd., Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use mas materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the Ur States" in the amount of $300 for issuance of the Certificate.

Plant Variety Protection Office
Telephone: (301) 504-5518

ITEM

16a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;

(2) the details of subsequent stages of selection and multiplication;

(3) evidence of uniformity and stability; and

(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified.

16b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all oth varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;

(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences;

(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clea indicate distinctness.

16c. Exhibit C forms are available from the PVPO for most crops; specify crop kind. Fill in Exhibit C (Objective Description o Variety) form as completely as possible to describe your variety.

16d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

16e. Section 52(4) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. The applicar may be the actual breeder, the employee of the breeder, the owner through purchase or inheritance, etc.

17. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant may NO reverse this affirmative decision after the variety has been sold and so labelled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See P.L. 103-349 for additional information.)*

20. See Sections 41, 42, and 43 of the Act and Section 97.175 of the regulations for eligibility requirements.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownersh or assignment during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing change of ownership or assignment is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sectio 97.130, 97.131, 97.175(h) of Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant should check the variety names proposed by contacting: See Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center–East, Beltsville, MD 20705. Telephone: (301) 504-8089.

16. Exhibit A. Origin and Breeding History of PHY 72 Acala.

PHY 72 Acala (PHY-72, B25507) is an Acala cotton variety derived by plant selection from a cross between commercial varieties Acala Prema (C32) and Acala 1517D (originating from New Mexico). The original cross was made by Phytogen Seed Co. personnel in 1989.

1989 Cross between commercial variety lines Acala Prema (C32) and Acala 1517D.

1989-90 F1 seed sent to and planted in Mexico Winter nursery, self pollinated, bulk harvest for generation advance.

1990 F2 segregating nursery population B7263 planted from bulk seed returning from Mexico Winter nursery. Among numerous selections, plant selection RB7263-5 continued to the 1991 research nursery.

1991 F3 progeny row B11985 planted from seed of F2 plant RB7263-5. Among numerous selections, plant selection RB11985-3 continued to the 1992 research nursery.

1992 F4 progeny row B15800 planted from seed of F3 plant RB11985-3. Among numerous selections, plant selection RB15800-9 continued to the 1993 research nursery.

1993 A single 60' row (B25507) was planted from seed of F4 plant RB15800-9. This F5 progeny row was identified and bulk harvested for potential superior productivity and fiber quality.

1994 Strain B25507 was evaluated in a replicated "Lines Tests" and compared to the variety MAXXA for productivity and fiber quality. A separate small planting was rogued and harvested for seed increase. However, 1994 crop year and production was less than optimal and validity of performance test information was questionable.

1995 Strain B25507 was not performance tested, but was continued for observation in Phytogen Seed Co. research nursery.

1996 Strain B25507 was reentered for evaluation in a replicated "Lines Test" at Corcoran, CA and compared to MAXXA for productivity and fiber quality. A separate planting (0.17 acres) was rogued and harvested for seed increase.

1997 Strain B25507 was evaluated in replicated "Preliminary Strains Tests". It was compared to the variety MAXXA for productivity and fiber quality. A separate planting (0.71 acres) was rogued and harvested for seed increase.

16. Exhibit A. Origin and Breeding History of PHY 72 Acala. (continued).

1998 Strain B25507 was designated PHY-72 and evaluated in replicated "Advanced Strains Tests". It was compared to MAXXA for productivity and fiber quality. PHY-72 was also entered into the San Joaquin Valley Cotton Board's (SJVCB) Acala Variety Tests and evaluated for productivity, fiber and spinning quality. A separate planting (3.80 acres) was rogued and harvested for seed increase.

1999 PHY-72 was evaluated in replicated "Advanced Strains Tests" and compared to MAXXA for productivity and fiber quality. PHY-72 also continued testing in the SJVCB Acala Variety Tests for the second year and evaluated for productivity, fiber and spinning quality. A separate planting (295 acres) was harvested for seed increase. A 5.0 acre seed increase was rogued and harvested for the maintenance of breeder seed.

2000 PHY-72 Acala continued to be evaluated in "Advanced Strains Tests" and compared to the variety MAXXA for productivity and fiber quality. PHY-72 is also entered into the third year of testing in the SJVCB Acala Variety Tests for the year 2000. Seed increase of 3200+ acres was grow in 2000, rogued, and inspected for the production of certified, registered, and foundation classes of seed.

Phytogen Seed Company, LLC.
Superior Upland & Pima Cotton Varieties
P.O. Box 787
850 Plymouth Ave.
Corcoran, CA 93212-0787
Telephone: 559.992.3988
Facsimile: 559.992.2581
JFMahill@dow.com

January 26, 2004

Re: Supplemental information supporting application for protection of the cotton variety 'PHY 72 Acala', PV # 200100115.

Statement of variant and/or off-types:

'PHY 72 Acala' is stable and uniform in plant type as determined by observations during four reproductive cycles. Occasional variant plants (~1/20,000) were observed in certified seed fields of the variety. These were recognized as plants more sensitive to the disease, Verticillium Wilt, in fields of high wilt pressure. Occasional off-type plants (~1/40,000) have been observed in seed production fields. These off-type plants were readily recognized as Acala x Pima hybrid outcrosses resulting from low incidence of random and uncontrolled pollen flow. These off-type hybrids typically exhibited excessive plant height, 6-15 inches taller than 'PHY 72 Acala', excessive vegetative plant vigor, and were rouged (removed) during seed production.

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JFMahill@dow.com

January 26, 2004

Re: Supplemental information supporting application for protection of the cotton variety 'PHY 72 Acala', PV # 200100115.

Statements of Distinctness, "most similar":

'PHY 72 Acala' is most similar to 'MAXXA' in that both cotton varieties were breed and developed in the San Joaquin Valley of CA and are adapted for production to this region.

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has demonstrated higher lint yield potential than 'MAXXA' over years of performance testing (~12-14 % yield advantage, reference data tables 1A and 1B).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a slightly more vigorous growth habit than 'MAXXA' (32.7 vs. 30.5 inch plant height, respectively).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a slightly more vigorous growth habit than 'MAXXA' (20.6 vs. 19.6 total nodes, respectively).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a slightly more vigorous growth habit than 'MAXXA' (7.6 vs. 6.4 nodes to 1st fruiting branch, respectively).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a slightly more open-foliage type than 'MAXXA' (15.7 vs. 18.0 cm leaf width, 10.2 vs. 11.2 cm leaf midrib length, and 10.0 vs. 11.0 cm leaf petiole length, respectively).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has slightly less average number of locules/boll than 'MAXXA' (4.40 vs. 4.70, respectively).

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a slightly lower boll wt. (6.00 vs. 6.55 gm), lower seed index wt. (10.5 vs. 12.0 gm), lower lint % (42.0 vs. 43.5), and lower gin turn-out (33.2 vs. 34.0) than 'MAXXA', reference data table 2A.

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' is slightly more sensitive to the cotton disease, Verticillium wilt, than 'MAXXA' (33 vs. 23 ratings, respectively), reference data table 2B, Vert. Wilt Ratings 1999.

'PHY 72 Acala' is most similar to 'MAXXA'; however, 'PHY 72 Acala' has a longer fiber length, higher fiber elongation, and higher fiber micronaire than 'MAXXA'. These measures of fiber quality parameters are consistent over years and multiple testing programs, reference data tables 3A, 3B, and 3C.

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Exhibit B AAA 16 Mar 2004 200100115

TABLE 2B : SUMMARY OF AGRONOMIC TRAITS FROM SJVCB VARIETY TESTS COMPARING PHY 72 Acala vs MAXXA.

		PHY 72		MAXXA		LSD(.05)	CV%
1998							
Boll Wt. (g)		6.0		5.8		ns	10.2
Lint Percent		39.5		41.2	*	1.0	2.3
Gin Turn-out		32.8		34.0	*	0.5	1.3
Plant Height (inches)		42	*	39		2	6.6
Maturity Rating (Est. % open Oct. 1)		38		40		ns	21.9
Vert. Wilt Rating - Mid Sept.	(-)	19		17		ns	18.3
1999							
Boll Wt. (g)		6.0		6.9	*	0.5	10.5
Lint Percent		41.8		43.0	*	1.0	3.3
Gin Turn-out		34.4		35.9	*	0.3	1.8
Plant Height (inches)		42		40		ns	9.7
Maturity Rating (Est. % open Oct. 1)		65		63		ns	16.0
Vert. Wilt Rating - Mid Sept.	(-)	33		23	*	5	16.7

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

16. Exhibit B. Statement of Distinctness - PHY 72 Acala.

[These pooled data averages are superseded by Table 2B AAA 16 Mar 2004]

The data shown below are means from data measurements on plants grown in Corcoran, California for two years. Pertinent dates are as follows:

Planting date 4-19-1999	Date of measurement 8-23-1999	Crop age (days) 126
Planting date 4-14-2000	Date of measurement 8-18-2000	Crop age (days) 126

	PHY 72		MAXXA	LSD	CV%
Plant Height (inches)	32.7	*	30.5	1.3	1.8
Total Nodes	20.6	*	19.6	0.7	1.5
Nodes to first fruiting branch	7.6	*	6.4	1.1	6.7
Height to first fruiting branch (cm)	16.0		13.2	3.4	10.4
Internode length on 3rd fruiting branch (cm)	11.8		12.5	2.9	10.7
Maturity (% open Oct. 1)	54.3		56.3	15.8	13.0
Leaf width (cm)	15.7	*	18.0	0.5	1.3
Leaf midrib length (cm)	10.2	*	11.2	0.2	0.9
Leaf petiole length (cm)	10.0	*	11.0	1.0	4.3
Leaf nectaries Present=1 Absent=2	1.0		1.0	....	...
Leaf hairs -- rating 0-3	1.3		2.0	....	...
Leaf glands -- rating 0-3	1.0		2.0	....	...
Stem hairs -- rating 0-3	1.1		1.3	....	...
Stem glands -- rating 0-3	2.0		1.8	....	...
Boll length (cm)	4.82		4.92	0.21	1.9
Boll width (cm)	3.29		3.55	0.27	3.5
Broadest at Base(1)/Middle(2)	1.00		1.20	....	...
Locules per boll	4.40	*	4.70	0.2	1.8

* Indicates significant difference from MAXXA at the 5% level.
Certain descriptive characteristics are on a rating or category basis.

Comparative determinations show lower leaf hair and gland densities on PHY 72 than on MAXXA while stem hair and gland densities are relatively equal.

PHY 72 has a slightly more vigorous growth habit than MAXXA as supported by data shown above. It is taller than MAXXA throughout the growing season. PHY 72 has more total nodes and the bottom canopy fruiting habit (height and nodes to first fruiting branch) is slightly higher than MAXXA. PHY 72 is a variety with a more open-foliage type than MAXXA as indicated by significant leaf measurement traits.

U.S. DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE, AMS, USDA
NATIONAL AGRICULTURAL LIBRARY Bldg., Rm. 500
10301 BALTIMORE Blvd.
BELTSVILLE, MD 20705

EXHIBIT C
(COTTON)

OBJECTIVE DESCRIPTION OF VARIETY
COTTON (Gossypium spp.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Phytogen Seed Company, LLC	PHY-72 (B25507)	PHY 72 Acala

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)	FOR OFFICIAL USE ONLY
P. O. Box 787 850 Plymouth Ave. Corcoran, CA 93212	PVPO NUMBER 200100115

Place the appropriate data that describes the varietal characteristic of this variety in the space provided. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characters marked with an asterisk * indicate necessary characters to be measured.

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

1. Maxxa 2. _____ 3. _____

*1. SPECIES:

X G. hirsutum L. ____ G. barbadense L.

*2. AREA(S) OF ADAPTATION: (A = Adapted, NA = Not Adapted, NT = Not Tested)

NT Eastern	NT Delta	NT Central	NT Blacklands
NT Plains	NT Western	NT Arizona	A San Joaquin

Other (Specify) _____

3. GENERAL: Characteristics which are known to be variable but are still useful for a meaningful description of the variety.

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Plant Habit: Spreading, Intermediate, Compact	Intermediate	Intermediate		
Foliage: Sparse, Intermediate, Dense	Intermediate	Intermediate		
Stem Lodging: Lodging, Intermediate, Erect	Erect	Erect		
Fruiting Branch: Clustered, Short, Normal	Normal	Normal		
Growth: Determinate, Intermediate, Indeterminate	Intermediate	Intermediate		
Leaf Color: Greenish yellow, Light green, Dark green	Light - Dark	Light - Dark		

3. GENERAL: (continued)

Boll Shape: Length less than width, Length equal to width, Length more than width	Length more than width	Length more than width		
Boll Breadth: Broadest at base, Broadest at middle	Broadest at base	Broadest at base		

4. MATURITY: (50 % Open Bolls; Preferred Method; Describe Method If Different Method Was Used)

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Date of 50 % open bolls	% open Oct. 1 52	% open Oct. 1 56		

5. PLANT:

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Cm to 1st Fruiting Branch (from cotyledonary node)	16.0	13.2	___.__	___.__
No. of Nodes to 1st Fruiting Branch (excluding cotyledonary node)	7.6	6.4	___.__	___.__
Mature Plant Height cm (from cotyledonary node to terminal)	83.1	77.5	____.__	____.__

6. LEAF: Upper most, fully expanded leaf.

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Type: Normal, Sub Okra, Okra, Super Okra	Normal	Normal		
Pubescence: Trichomes/ sq. cm Bottom surface excluding veins	Sparse	Medium		
Nectaries: Present or Absent	Present	Present		

7. STEM PUBESCENCE: Glabrous, Intermediate, Hairy

Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Intermediate	Intermediate		

8. GLANDS: (Gossypol) Absent, Sparse, Normal, More Than Normal

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Leaf:	Sparse	Normal		
Stem:	Normal	Normal		
Calyx Lobe: (normal is absent)	Absent	Absent		

9. FLOWER:

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Petals: Cream, Yellow	Cream	Cream		
Pollen: Cream, Yellow	Cream	Cream		
Petal Spot: Present, Absent	Absent	Absent		

*10. SEED:

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Seed Index (g/100 seed, fuzzy basis)	10.7	12.3		
Lint Index (g lint/100 seeds)	7.50	9.00		

*11. BOLL:

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
Lint Percent (X Picked ___ Pulled)	41.2	42.3		
OR				
Gin Turnout (X Picked ___ Stripped)	32.7	33.5		
Number of Seeds per Boll	34.0	31.1		
Grams Seed Cotton per Boll	6.19	6.64		
Number of Locules per Boll	4.4	4.7		
Boll Type (Stormproof, Storm Resistant, Open)	Open	Open		

12. FIBER PROPERTIES:

Specify Method (HVI or other): Length and Uniformity by Fibrograph 730; T1 and E1 by Stelometer; Micronaire by Spinlab 675; Fineness by Arealometer.

	Application Variety	Comparison Variety 1	Comparison Variety 2	Comparison Variety 3
* Length (inches, 2.5% SL)	1.19	1.16		
* Uniformity (%)	45.4	46.6		
* Strength, T1 (g/tex)	23.5	23.1		
* Elongation, E1 (%)	7.5	6.2		
* Micronaire	4.55	4.21		
Fineness (Source AFIS)	171	169		
Yarn Tenacity (cN/tex, 27 tex)	--.-	--.-		
Yarn Strength (lbs. 22's)	152	156		

13. DISEASES: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

NT Alternaria macrospora

NT Anthracnose

NT Ascochyta Blight

NT Bacterial Blight (Race 1)

NT Bacterial Blight (Race 2)

NT Bacterial Blight (Race _____)

NT Diplodia Boll Rot

NT Fusarium Wilt

NT Phymatotrichum Root Rot

NT Pythium (specify species) _____

NT Rhizoctonia solani

NT Southwestern Cotton Rust

NT Thielaviopsis basicola

MR Verticillium Wilt

14. NEMATODES, INSECTS AND PESTS: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

NT Root-Knot Nematode

NT Boll Weevil

NT Bollworm

MS Cotton Aphid

NT Cotton Fleahopper

NT Cotton Leafworm

NT Cutworm (specify species)_____

NT Fall Armyworm

MS Other (specify) Beet Armyworm

NT Reniform Nematode

NT Grasshopper (specify species)_____

MS Lygus (specify species)_____

NT Pink Bollworm

MS Spider Mite (specify species)_____

NT Stink Bug (specify species)_____

MS Thrips (specify species)_____

NT Tobacco Bud Worm

5. COMMENTS: Present any additional information that cannot adequately be described in 1 through 13 which significantly distinguishes your variety.

The evaluation reported in #13 and #14 above are from general field observations. Precise testing has not been conducted. Moderately suseptible indicates that damage was noted as a result of pest infestation.

Botanical properties are described in Section C while yield, fiber quality and processing characteristics are described in Section D.

16. Exhibit D. Additional Description of the Variety - PHY 72 Acala.

Yield - In tests conducted by Phytogen Seed Co. from 1996 - 2000 the mean lint yield over five years for PHY 72 was 14.4% higher than MAXXA. The difference was significant at the 5% level (Table 1A). The three years of testing with the SJVCB showed a 11.8% lint yield increase over MAXXA and is expected to be statistically significant (Table 1B). The over-years statistical analysis was not available for SJVCB data. The consistent lint productivity of PHY 72 is considered to represent a new high level of yield potential for San Joaquin Valley Acala cotton varieties.

Agronomic properties - The Phytogen Seed Co. data in Table 2A shows PHY 72 to have a significantly smaller boll and lower seed index. However, seed integrity (a rating measure of seed breakage in ginning process) for PHY 72 is lower than MAXXA. PHY 72 also has a significantly lower gin turn-out and lint percent. The SJVCB data in Table 2B generally supports this information. PHY 72 ranges from 2-3 inches taller than MAXXA in plant height. Maturity rating for PHY 72 are equal to MAXXA. Table 2C shows other seed properties of PHY 72 as compared to MAXXA.

Fiber quality - Table 3A shows cumulative data for two years of testing by Phytogen Seed Co. PHY 72 fiber has a significantly longer fiber, slightly lower uniformity, higher elongation (E1), and higher micronaire than MAXXA. The SJVCB fiber data from StarLab, Visalia CO-HVI, and ITC-HVI (Table 3B and 3C) supports the Phytogen Seed Co. testing data. PHY 72 has significantly lower Shirley non-lint percent, seed coat fragments, and has fiber T1 strength equal to (occasionally stronger than) MAXXA. AFIS data shows PHY 72 to have fiber significantly more mature and finer in standard fineness than MAXXA. The results of improved elongation, in addition to good fiber maturity and standard fineness, indicate that PHY 72 is expected to have a smaller fiber perimeter than MAXXA. These are desirable traits and are currently under further evaluation.

Spinning properties - Spinning properties of 50's and 36's count yarns for 1998 and 1999 SJVCB tests are shown in Tables 4a and 4b, respectively. These data indicate that PHY 72 tends to have a slightly lower yarn strength (break factor) than MAXXA, but not significantly in all cases. Yarn strength for PHY 72 is well within the acceptable high quality range for San Joaquin Valley Acala cotton varieties. Additional yarn spinning measures for PHY 72 of thicks, thins, non-uniformity CV%, and appearance index show improvements of PHY 72 over MAXXA, some of which are statistically significant.

TABLE 1A: SUMMARY OF PHYTOGEN LINT YIELD DATA OVER FIVE YEARS COMPARING PHY 72 Acala vs. MAXXA.

LINT YIELD (LBS./AC)	PHY 72		MAXXA	LSD(.05)	CV%	% OF MAXXA
2000						
Buena Vista	2069		2102	ns	2.5	98.4
Corcoran	1260		1292	ns	5.1	97.5
Stratford	2606	*	2122	84	2.4	122.8
Waukena	2070	*	1851	106	3.7	111.8
Dos Palos	2348	*	1892	184	6.1	124.1
Mean	**2071**	*	**1852**	**154**	**4.1**	**111.8**
1999						
Buena Vista	2036	*	1878	140	5.0	108.4
Tipton	1508		1442	ns	5.8	104.6
Lost Hills	1728	*	1565	158	6.5	110.4
Corcoran	2022		1968	ns	5.8	102.7
Stratford	1822	*	1544	98	4.3	118.0
Tranquility	2012	*	1683	137	5.2	119.5
Dos Palos	1846		1703	ns	6.3	108.4
Mean	**1853**	*	**1683**	**80**	**5.6**	**110.1**
1998						
Kern Lake	1151	*	683	185	9.0	168.5
Waukena	1464	*	1099	156	5.4	133.2
Tranquility	1230	*	1064	61	2.4	115.6
Mean	**1282**	*	**949**	**304**	**5.4**	**135.1**
1997						
Corcoran-1	1658	*	1420	97	2.8	116.8
Corcoran-2	1768	*	1472	90	2.5	120.1
Buena Vista	1309		1242	ns	6.4	105.4
Waukena	1677	*	1409	165	4.8	119.0
Mean	**1603**	*	**1386**	**48**	**4.2**	**115.7**
1996						
Corcoran	1585	*	1323	138	4.2	119.8
OVER YEARS MEAN (20 LOC.)	**1758**	*	**1538**	**100**	**5.2**	**114.4**

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.

TABLE 1B: SUMMARY OF SJVCB (San Joaquin Valley Cotton Board) YIELD DATA OVER YEARS COMPARING PHY 72 Acala vs. MAXXA.

LINT YIELD (LBS./AC)	PHY 72		MAXXA	LSD(.05)	CV%	% OF MAXXA
2000						
Buttonwillow	1585		1426	ns	8.0	**111.2**
Mettler	1690	*	1405		6.0	**120.3**
Waukena	1723	*	1584		4.0	**108.8**
Corcoran	1383	*	1244		4.0	**111.2**
West Side Field Station	1979	*	1659		5.0	**119.3**
Firebaugh	1338		1423	ns	7.0	**94.0**
Chowchilla	1573		1462	ns	12.0	**107.6**
Los Banos	1848	*	1717		3.0	**107.6**
Mean	**1640**	*	**1490**		**6.0**	**110.1**
1999						
Buttonwillow	1857	*	1671	83	3.4	**111.1**
Wasco	1180	*	1058	118	7.7	**111.5**
Waukena	1627		1603	ns	3.1	**101.5**
Corcoran	1574	*	1436	92	4.5	**109.6**
West Side Field Station	1953	*	1740	98	4.0	**112.2**
Cantua	1394		1287	ns	7.2	**108.3**
Chowchilla	1468	*	1212	120	7.0	**121.1**
Los Banos	1880	*	1814	59	2.4	**103.6**
Mean	**1617**	*	**1478**	**77**	**4.7**	**109.4**
1998						
Buttonwillow	981	*	745	83	6.4	**131.7**
Wasco	1084	*	862	114	7.8	**125.8**
Waukena	1425	*	1145	68	3.6	**124.5**
Corcoran	1202	*	1037	102	6.2	**115.9**
West Side Field Station	1348	*	1142	69	3.6	**118.0**
Chowchilla	1327		1323	ns	3.8	**100.3**
Los Banos	1309	*	1080	68	3.8	**121.2**
Mean	**1239**	*	**1048**	**73**	**4.9**	**118.2**
OVER YEARS MEAN (23 LOC.)	**1510**		**1351**			**111.8**

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.

TABLE 2A: SUMMARY OF PHYTOGEN BOLL, SEED AND PROCESSING DATA OVER 12 TRIALS COMPARING PHY 72 Acala vs. MAXXA

1999-2000		PHY 72	MAXXA	LSD(.05)	CV%
Boll Wt. (g)		6.00	6.55 *	0.12	4.7
Seed Index (g/100 seeds)		10.5	12.0 *	0.3	4.2
Seed Integrity	(-)	1.15	1.52	ns	26.0
Lint Percent		42.0	43.5 *	0.5	1.5
Gin Turn-out		33.2	34.0 *	0.5	1.3
Plant Height (inches)		33 *	31	2	1.8

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

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TABLE 2C: SJVCB COTTONSEED QUALITY ANALYSIS.

		PHY 72		MAXXA		LSD(.05)	CV%
1998							
% Moisture	(-)	8.1	*	9.2		0.5	2.3
% F.M.	(-)	0.6		0.8		ns	47.8
% FFA	(-)	0.3		0.2		ns	25.0
% Oil		19.5		18.9		ns	9.1
% NH_3		3.81		4.68	*	0.37	7.4
% Gossypol	(-)	1.20		1.14		ns	4.8
Grade		109		108		ns	1.3
1999							
% Moisture	(-)	7.3		7.7		ns	2.4
% F.M.	(-)	0.8		0.6		ns	35.4
% FFA	(-)	0.4		0.3		ns	27.9
% Oil		20.3		19.6		ns	2.2
% NH_3		4.03		4.56	*	0.15	3.0
% Gossypol	(-)	1.28		1.25		ns	5.4
Grade		110		111		ns	1.4

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

TABLE 3A: SUMMARY OF FIBER QUALITY TRAITS OVER 12 TRIALS COMPARING PHY 72 Acala vs. MAXXA.

FIBER PROPERTIES		PHY 72		MAXXA		LSD(.05)	CV%
1999 - 2000 (12 locations)							
Individual Instruments - StarLab.							
2.5% Span Length		1.18		1.18		ns	1.4
Uniformity		48.4		48.6		ns	1.6
% Short Fiber	(-)	5.2		5.3		ns	10.8
Strength T1 (g/Tex)		24.4		24.7		ns	3.5
Elongation E1		8.5	*	7.0		0.7	9.2
Micronaire		4.61	*	4.38		0.13	3.1
High Volume Instruments (HVI)							
Fiber length		1.17	*	1.15		0.01	1.4
Uniformity		84.1		84.7	*	0.4	0.8
Strength T1 (g/Tex)		32.3		32.7		ns	2.6
Elongation E1		7.4	*	6.2		0.2	2.4
Micronaire		4.59	*	4.32		0.10	2.9

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 0.05 LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

TABLE 3B: SUMMARY OF FIBER QUALITY TRAITS - SJVCB VARIETY TESTS 1998

		PHY 72		MAXXA		LSD(.05)	CV%
FIBER QUALITY - StarLab.							
2.5% Span Length		1.22		1.20		ns	0.6
Uniformity		48.1		48.9	*	0.6	1.5
% Short Fiber	(-)	4.8		5.2		ns	9.7
Strength T1 (g/Tex)		25.7	*	24.5		0.9	3.5
Elongation E1		8.4	*	6.6		0.4	5.4
Micronaire		4.44	*	4.19		0.12	2.4
Yarn Tenacity 22's		152		156	*	3	2.3
AFIS ANALYSER							
Fineness	(-)	171		169		ns	1.7
Std. Fineness	(-)	177	*	180		2	1.1
Maturity Ratio		0.965	*	0.940		0.013	1.1
Micronaire		4.46	*	4.20		0.16	2.7
Shirley Non-Lint %	(-)	2.2	*	2.9		0.3	12.8
Seed Coat Fragments per 5 gms.	(-)	53	*	64		10	23.9
FIBER QUALITY - Visalia CO, HVI							
Fiber Length		1.23	*	1.19		0.01	1.2
Uniformity		83.9		84.5	*	0.5	0.8
Strength T1 (g/Tex)		34.5		34.4		ns	3.1
Micronaire		4.56	*	4.33		0.21	4.1
Leaf Grade	(-)	3.6	*	4.2		0.4	12.2
FIBER QUALITY - ITC, HVI							
Fiber length		1.22	*	1.18		0.01	0.9
Uniformity		83.0		83.4	*	0.3	0.4
Strength T1 (g/Tex)		34.5		34.7		ns	1.7
Elongation		6.4	*	5.6		0.1	2.3
Micronaire		4.46	*	4.20		0.16	2.7

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

TABLE 3C: SUMMARY OF FIBER QUALITY TRAITS - SJVCB VARIETY TESTS 1999

		PHY 72		MAXXA		LSD(.05)	CV%
FIBER QUALITY - StarLab.							
2.5% Span Length		1.21	*	1.18		0.01	1.3
Uniformity		47.9		48.6	*	0.6	1.7
% Short Fiber	(-)	6.9		6.8		ns	7.6
Strength T1 (g/Tex)		24.2		24.0		ns	3.2
Elongation E1		8.6	*	7.4		0.4	5.9
Micronaire		4.09		4.05		ns	3.6
Yarn Tenacity 22's		134		137		ns	2.9
AFIS ANALYSER							
Fineness	(-)	159		159		ns	1.6
Std. Fineness	(-)	179		180		ns	1.0
Maturity Ratio		0.884		0.886		ns	1.2
Micronaire		4.04		4.04		ns	3.1
Shirley Non-Lint %	(-)	2.1	*	3.0		0.5	14.3
Seed Coat Fragments per 5 gms.	(-)	51	*	64		9	20.3
FIBER QUALITY - Visalia CO, HVI							
Fiber Length		1.19	*	1.15		0.01	1.5
Uniformity		82.4		83.0	*	0.5	0.8
Strength T1 (g/Tex)		33.4		33.5		ns	3.1
Micronaire		3.92		3.94		ns	3.7
Leaf Grade	(-)	2.7		2.9		ns	14.1
FIBER QUALITY - ITC, HVI							
Fiber length		1.19	*	1.15		0.01	0.9
Uniformity		82.8		83.6	*	0.4	0.6
Strength T1 (g/Tex)		33.6		33.6		ns	2.1
Elongation		7.2	*	6.0		0.1	2.8
Micronaire		4.04		4.04		ns	3.1

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

TABLE 4A: ANOVA OF SPINNING PROPERTIES (SJVCB Tests) COMPARING PHY 72 Acala vs. MAXXA. 1998

		PHY 72		MAXXA		LSD(.05)	CV%
SPINNING PROPERTIES - ITC LAB							
CARDED 22's YARN TENACITY		152		156	*	3	2.3
MANUFACTURING WASTE							
% Picker and Card	(-)	11.1		9.8		ns	18.4
% Comber	(-)	17.3		16.4	*	0.6	3.1
% Total Waste	(-)	26.5		24.6		ns	7.0
YARN PROPERTIES							
Carded 50's							
Break Factor		2455		2598	*	110	3.6
Neps	(-)	1426		1371		ns	5.3
Thicks	(-)	1925		1817		ns	4.4
Thins	(-)	881		874		ns	9.9
Non Uniformity CV%	(-)	24.4		24.1		ns	1.4
Appearance Index		108	*	92		11	9.6
Combed 50's							
Break Factor		2815		2928	*	61	1.8
Neps	(-)	140		146		ns	22.5
Thicks	(-)	245		266		ns	8.2
Thins	(-)	140	*	179		34	13.1
Non Uniformity CV%	(-)	17.4		17.7		ns	1.0
Appearance Index		128		122		ns	5.8
36 Count Rotor							
Break Factor		2193		2209		ns	1.6
Neps	(-)	93		110		ns	14.1
Thicks	(-)	262	*	332		39	8.1
Thins	(-)	110	*	151		21	7.9
Non Uniformity CV%	(-)	17.0	*	17.5		0.3	.7
Appearance Index		127		123		ns	5.0
36 Count Ring							
Break Factor		2772		2885		ns	2.2
Neps	(-)	868		812		ns	6.0
Thicks	(-)	1167		1117		ns	5.7
Thins	(-)	128		122		ns	5.8
Non Uniformity CV%	(-)	21.6		21.5		ns	1.4
Appearance Index		105	*	90		9	7.6

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

TABLE 4B: ANOVA OF SPINNING PROPERTIES (SJVCB Tests) COMPARING PHY 72 Acala vs. MAXXA. 1999

		PHY 72		MAXXA		LSD(.05)	CV%
SPINNING PROPERTIES - ITC LAB							
CARDED 22's YARN TENACITY		134		137		ns	2.9
MANUFACTURING WASTE							
% Comber	(-)	19.8		18.5	*	0.8	3.9
YARN PROPERTIES							
Carded 50's							
Break Factor		2391		2554	*	57	1.9
Neps	(-)	1769		1675		ns	5.4
Thicks	(-)	2181		2049	*	124	5.2
Thins	(-)	997		928		ns	11.3
Non Uniformity CV%	(-)	25.1		24.7		ns	1.7
Appearance Index		95		80		ns	10.6
Combed 50's							
Break Factor		2765		2919	*	55	1.6
Neps	(-)	177		161		ns	12.3
Thicks	(-)	321		322		ns	7.5
Thins	(-)	144		152		ns	9.3
Non Uniformity CV%	(-)	17.7		17.9		ns	1.1
Appearance Index		118		112		ns	4.6
36 Count Rotor							
Break Factor		2147		2168		ns	1.4
Neps	(-)	727	*	976		96	9.2
Thicks	(-)	246	*	343		28	7.6
Thins	(-)	99	*	170		19	8.2
Non Uniformity CV%	(-)	16.9	*	17.7		0.2	.9
Appearance Index		117		110		ns	7.4
36 Count Ring							
Break Factor		2557		2729	*	53	1.2
Neps	(-)	1076		1095		ns	5.0
Thicks	(-)	1367		1345		ns	5.1
Thins	(-)	118		112		ns	4.6
Non Uniformity CV%	(-)	22.4		22.5		ns	1.2
Appearance Index		95		80		ns	10.6

* INDICATES A SIGNIFICANT DIFFERENCE AT THE 5% LEVEL.
ns INDICATES NON-SIGNIFICANCE.
(-) A DECREASE IN RELATIVE VALUE REPRESENTS AN IMPROVEMENT.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Phytogen Seed Company, LLC	B25507, PHY 72, Phytogen 72	PHY 72 Acala
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
P. O. Box 787 850 Phymouth Avenue Corcoran, CA 93212	(559) 992-3988	(559) 992-2581
	7. PVPO NUMBER	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ **YES** ☐ **NO**

10. Is the applicant the original owner? ☑ **YES** ☐ **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☑ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

The applicant, Phytogen Seed Company, LLC, has been involved in the development of improved cotton varieties since 1982 and in the sale of cotton varieties since 1986 (as a part of the J. G. Boswell Co.). A joint venture between Mycogen Corp. and J. G. Boswell in December 1997 established Phytogen Seed Co. LLC. The applicant owns the cotton variety 'PHY 72 Acala' on the basis that it was developed with Company-owned seed stocks, and through research conducted at Corporate facilities, by Phytogen personnel.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

16. Exhibit E. Statement of the Basis of the Application's Ownership.

The applicant, Phytogen Seed Company, LLC, has been involved in the development of improved cotton varieties since 1982 and in the sale of cotton varieties since 1986 (as a part of the J. G. Boswell Co.). A joint venture between Mycogen Corp. and J. G. Boswell in December 1997 established Phytogen Seed Co. LLC. The applicant owns the cotton variety PHY 72 Acala on the basis that it was developed with Company-owned seed stocks, and through research conducted at Corporate facilities, by Phytogen personnel.